

ABSTRACT

The present invention is a wing having telescoping segments deployed via an actuator composed of a heat activated material. The actuator is a coiled tube of shape memory alloy (SMA) with large force-displacement characteristics activated thermally by either a fluid or an electrical charge. Actuator motion extends an inner wing segment from an outer wing segment when the coiled tube is compressed. Compression is achieved by heating the coiled tube so as to cause a phase transformation from Martensite to Austenite. The inner wing segment may be retracted by a mechanical device or second SMA coil when the coiled tube is cooled and returned to its Martensite phase.